UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB99-0260

May 12, 2000

Ms. Bonnie J. Wood
Forest Supervisor
Malheur National Forest
P.O. Box 909
John Day, Oregon 97845

Re: Section 7 Consultation on Effects of the Proposed Murderers Creek Road Reconstruction and Resurfacing Project on Middle Columbia River Steelhead, Malheur National Forest, Grant County, Oregon

Dear Ms. Wood:

This responds to an April 27, 2000 letter from Bonnie J. Wood, Malheur National Forest (MNF) to Ron Lindland, National Marine Fisheries Service (NMFS), requesting formal consultation regarding the potential effects of the Murderers Creek Road Reconstruction and Resurfacing project on Middle Columbia River (MCR) steelhead (*Oncorhynchus mykiss*). Murderers Creek is a tributary to the South Fork of the John Day (SFJD) River. The SFJD River enters the mainstem John Day River at Dayville, Oregon. The accompanying Biological Assessment (BA) described the proposed action and the environmental baseline, and addressed the effects of that action on MCR steelhead and their designated critical habitat. In the BA, the MNF determined that the subject action is "may affect – likely to adversely affect" (LAA) MCR steelhead. Because juvenile MCR steelhead are likely to be present in the project area and because instream work is involved, there is more than a negligible likelihood that incidental take of MCR steelhead will occur. The interagency Level 1 team for the MNF met on April 19, 2000 to review the MNF's effects determination and documentation of Aquatic Conservation Strategy (ACS) consistency for the subject action. The team concurred on the ACS consistency analysis and effects determination provided by the MNF.

MCR steelhead were listed as threatened under the Endangered Species Act (ESA) by the NMFS on March 25, 1999 (64 FR 14517). The NMFS designated critical habitat for MCR steelhead on February 16, 2000 (65 FR 7764). The proposed Murderers Creek Road Reconstruction and Resurfacing project is within designated critical habitat for MCR steelhead.

This letter constitutes formal consultation and serves as a biological opinion for MCR steelhead. The objective of this biological opinion is to determine whether the proposed action is likely to jeopardize the continued existence of MCR steelhead or result in the destruction or adverse modification of their designated critical habitat.

PROPOSED ACTION

The proposed action is the reconstruction and resurfacing of 3.06 miles of road (Forest Roads 2170 and 2490) which closely parallels Murderers Creek. The project is located between Tex Creek and Stewart Cabin. Stream bank stabilization work will be done at five sites along Road 2170: (1) A combination of large logs, rootwads, and boulders would placed along approximately 112 feet of streambank at milepost (MP) 0.52; (2) large logs would be placed along approximately 65 feet and rock gabions along 20 feet of streambank at MP 0.85);
(3) rootwads and boulders would be placed along approximately 70 feet of streambank at MP 0.93;
(4) boulders and small woody debris would be placed in Tennessee Creek at MP 1.22; and,
(5) boulders and straw mulch will be placed along a cutbank at MP 1.39. At MP 0.78 along Road 2490, logs and boulders will be buried in a meander bend outside the active stream channel to serve as deflectors during high water events. Existing culverts would be replaced with larger culverts capable of passing 100-year flood events on six small tributaries to Murderers Creek. Four of these tributary streams are intermittent and two (Oregon Mine Creek and Tennessee Creek) are perennial. Equipment used to place these materials would not enter the stream. A new ditch relief culvert will be placed at MP 0.03 on Road 2170 and a flood relief culvert at MP 0.55 on Road 2490.

Three existing large (each 72" wide x 44" high), parallel culverts at the Road 2490 crossing of Murderers Creek will be replaced with a single lane bridge. The concrete bridge will be 50 to 60 feet in length and set at an elevation which will accommodate both predicted 100 year flood events and associated debris passage. Bridge abutments will be either concrete or driven piles. Water will be diverted through one culvert while the other two are removed. Because stream flows are low during the specified in-water work period, actual in-water work (except for the temporary diversion to remove the culverts) will be minimal at the bridge site.

All refueling and servicing of mechanized equipment would be conducted outside riparian habitat conservation areas (RHCAs). Limited amounts of excavation in the stream channel and streambank would be conducted in selected areas to increase the likelihood that the large wood will remain on site. All instream work would be completed during the Oregon Department of Fish and Wildlife's (ODFW) preferred in-water work period of July 15 to August 31. In addition, the streambank stabilization sites would be covered with straw mulch and planted with conifers, alder, and willow as well as native grasses.

On Road 2170 between MP 0.49 and 0.57, approximately 340 feet of the existing road would be realigned approximately 40 feet farther from Murderers Creek. The area between the relocated road and the stream will be planted with ponderosa pine and snowberry, and the cutbank planted with native grasses, forbs, and shrubs. On Road 2490 between MP 0.75 and 0.80, approximately 250-300 feet of the existing road would be realigned such that the center line of the road is 10-12 feet farther from Murderers Creek. Then a 3 foot x 6 foot x 150 foot trench would be dug along the stream-side of the road but outside of the stream channel. The trench would be lined with filter cloth and backfilled with large boulders, cobble and topsoil. The disturbed area would be straw mulched and planted with native grasses; then later planted with hardwoods, shrubs, and conifers.

Along the 3.06 miles of Roads 2170 and 2490 in the project area, approximately 725 cubic yards of rock will be placed in selected areas within the existing road prism to build up, out slope, and shape the road grade and shoulders to reduce surface run-off into Murderers Creek. A layer of crushed rock will then be added to the roads before the bituminous (asphalt) surface treatment (BST) application is completed.

In addition, access will be eliminated to five dispersed campsites along Murderers Creek and reduce multiple entry points at nine other dispersed sites. A new cattle guard will be installed at MP 0.74 on Road 2170 in preparation for fencing livestock out of the riparian area in the Oregon Mine Campground. Pages III-4 through III-13 of the BA provide detailed descriptions of each of the actions summarized above.

BIOLOGICAL INFORMATION AND CRITICAL HABITAT

The listing status and biological information for MCR steelhead are described in Busby et al. (1996). The NMFS designated critical habitat for MCR steelhead on February 16, 2000 (65 FR 7764). The action addressed in this biological opinion is within the area designated as critical habitat for MCR steelhead. MCR steelhead are known to spawn and rear in Murderers Creek within the project site as well as upstream and downstream from it. ODFW has designated this segment of Murderers Creek as an index reach for conducting annual steelhead redd counts.

EVALUATING PROPOSED ACTIONS

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA, as defined by 50 CFR Part 402 of the implementing regulations. NMFS must determine whether: (1) the action is likely to jeopardize the continued existence of the listed species; and (2) the action is likely to destroy or adversely modify critical habitat. This analysis involves the following steps: (A) Define the biological

requirements of the species; (B) evaluate the environmental baseline relative to the species' current status; (C) determine the effects of the proposed or continuing action on the species; (D) determine whether the species can be expected to survive with an adequate potential for recovery under the effects of the proposed or continuing action, the environmental baseline and any cumulative effects, and considering measures for survival and recovery specific to other life stages; and (E) identify reasonable and prudent alternatives to a proposed or continuing action that is likely to jeopardize the continued existence of the species.

In summary, for spawning and rearing habitat, NMFS' jeopardy analysis considers direct and indirect mortality of MCR steelhead attributable to the proposed action. The NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for productive spawning and rearing of MCR steelhead.

Biological Requirements

The biological requirements of MCR steelhead are discussed in Busby et al. (1996). For this consultation, NMFS finds that the biological requirements of MCR steelhead are best expressed in terms of environmental factors that define properly functioning freshwater aquatic habitat necessary for survival and recovery of MCR steelhead. The NMFS defines this "properly functioning" condition as the state in which all of the individual habitat factors operate together to provide a healthy aquatic ecosystem that meets the biological requirements of the fish species of interest. Individual environmental factors include water quality, habitat access, physical habitat elements, channel condition, and hydrology. Properly functioning watersheds, where all of the individual factors operate together to provide healthy aquatic ecosystems, are necessary for the survival and recovery of MCR steelhead.

Environmental Baseline

The environmental baseline is an analysis of the effects of past and on-going human and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR 402.02). For the proposed Murderers Creek road reconstruction and resurfacing project, the action area, therefore, includes the mainstem of Murderers Creek from Tex Creek downstream to the MNF boundary and those Murderers Creek tributaries where culverts will be replaced (Oregon Mine Creek, Tennessee Creek, and 4 unnamed intermittent streams) from the culvert installation sites downstream to their confluence with Murderers Creek.

The current population status and trends for MCR steelhead are described in Busby et al. (1996). Environmental baseline conditions within the action area were evaluated for the subject action at the project level and watershed scales. This evaluation was based on the "matrix of pathways and indicators" (MPI) described in "Making Endangered Species Act Determinations of Effect for

Individual or Grouped Actions at the Watershed Scale" (NMFS 1996). This method assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species.

In the Stewart Cabin sub-watershed (6^{th} field HUC), 5 of the 18 habitat indicators in the MPI were rated as properly functioning. These were: nutrients, refugia, stream bank condition, drainage network, and road density. Nine of the 18 were rated as functioning "at risk." These were: sediment, physical barriers, pool quality, off-channel habitat, width/depth ratio, floodplain connectivity, peak/base flows, disturbance history, and riparian reserves. Temperature (rearing only), substrate embeddedness, large woody debris, and pool frequency were rated as not properly functioning. The environmental baseline conditions for each habitat indicator in the MPI are described in the BA and incorporated herein by reference.

ANALYSIS OF EFFECTS

Effects of Proposed Action

In the BA, the MPI (NMFS 1996) was used to predict the effects of the action on current aquatic conditions (the environmental baseline). This assessment method was designed to provide adequate information in a tabular form for NMFS to determine the effects of actions subject to ESA consultation. The effects of the actions are expressed in terms of the expected effect (restore, maintain, degrade) on each of 18 aquatic habitat factors in the action area, as described in the "checklist for documenting environmental baseline and effects of the action" (checklist) (NMFS 1996) completed for each action and associated watershed. The results of the completed checklist for the action provide a starting point for determining the overall effect of the action on the environmental baseline. Implementation of the Murderers Creek Road Reconstruction and Resurfacing project is expected to help restore five (sediment, physical barriers, substrate embeddedness, large woody debris, and floodplain connectivity) of the 18 aquatic habitat parameters considered in the MPI. The other parameters are expected to be at least maintained.

Implementation of the proposed Murderers Creek Road Reconstruction and Resurfacing project is expected to have long term beneficial effects on aquatic habitat in the project area. Stabilization of streambanks, installation of properly sized culverts on tributary streams, and resurfacing of the road which closely parallels Murderers Creek is expected to reduce sediment transport to the streams, improve fish passage into Oregon Mine and Tennessee Creeks, reduce substrate embeddedness, and improve floodplain connectivity over the long term. Replacement of the three large culverts with a bridge at the Road 2490 crossing of Murderers Creek will improve fish passage and reduce the risk of additional sediment entering Murderers Creek because the existing culverts are inadequate to pass flood flows. These changes would result in improved spawning, rearing, and feeding habitat for MCR steelhead at a wide range of flows. Addition of large logs and rootwads as part of the bank stabilization

increases large wood in the project area stream reach. Planting trees in riparian areas will improve shade, provide a future source of large wood and reduce erosion. Increased stream shade should help to reduce stream temperatures over the long term. Other habitat parameters are expected to be at least maintained at present levels. The analysis of potential effects on each habitat indicator in the MPI are described in the BA and incorporated herein by reference.

Short-term negative effects of the project include disturbance and redistribution of fine sediment in the stream channel and increased turbidity resulting from instream work. There is also the possibility of the excavator killing juvenile fish while placing logs and performing other in-water work. Overall, direct mortality is expected to be minimal, because juvenile MCR steelhead will likely avoid the excavator and can move freely upstream or downstream from the project area.

Somewhat longer term indirect effects could occur after completion of the project. Recontoured streambanks and fill slopes at the culvert replacement sites may contribute sediment to the stream until revegetation occurs. Overall, however, the proposed project is expected to result in long-term beneficial effects on the aquatic habitat in Murderers Creek.

Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area for this consultation includes the mainstem of Murderers Creek from Tex Creek downstream to the MNF boundary and those Murderers Creek tributaries where culverts will be replaced (Oregon Mine Creek, Tennessee Creek, and 4 unnamed intermittent streams) from the culvert installation sites downstream to their confluence with Murderers Creek. The MNF identified no specific private or state actions that are reasonably certain to occur in the future that would affect MCR steelhead or their habitat within the action area.

Significant improvement in MCR steelhead reproductive success outside of MNF lands is unlikely without changes in agricultural and other land and water management practices occurring within the non-Federal riparian areas in the Murderers Creek 5th field watershed. Given that the MCR steelhead is listed as threatened and critical habitat has been designated, NMFS assumes that non-Federal land owners will take steps to curtail or avoid land management practices that would result in the take of MCR steelhead. NMFS is not aware of any specific future actions which are reasonably certain to occur on non-Federal lands. Until improvements in non-Federal land management practices are actually implemented, NMFS assumes that future private and State actions will continue at similar intensities as in recent years.

CONCLUSIONS

The NMFS has determined that, when the effects of the Murderers Creek road reconstruction and resurfacing project addressed in this biological opinion are added to the environmental baseline and cumulative effects occurring in the action area, they are not likely to jeopardize the continued existence of MCR steelhead. Additionally, the NMFS concludes that the subject actions would not cause adverse modification or destruction of designated critical habitat for MCR steelhead. This conclusion was reached primarily because: (1) All in-water work would be completed during the ODFW's preferred in-water work period between July 15 and August 31 before adults return to spawn and after smolts have migrated to sea; (2) juvenile MCR steelhead which may be rearing in the project area are likely to avoid machinery working in the stream by moving upstream or downstream from the work site during construction; (3) best management practices will be implemented to minimize transport of sediment into the stream and to areas downstream from the project area both during and after construction; (4) potential for entry of hazardous materials to the stream channel would be minimized, as all refueling or servicing of mechanized equipment will occur outside riparian habitat conservation areas (RHCAs); and (5) five of the 18 aquatic habitat parameters in the MPI are expected to be improved in the long-term by implementation of this project and the other 13 would be maintained. To reach these conclusions, NMFS used the best scientific and commercial data available as documented herein and by the BA.

CONSERVATION RECOMMENDATION

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. The NMFS has no additional conservation recommendations regarding the action addressed in this opinion.

REINITIATION OF CONSULTATION

Reinitiation of consultation is required if: (1) the action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Biological Opinion; (2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or (3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). The MNF must also reinitiate consultation if the action covered in this Opinion is not in compliance with requirements of NMFS' broad-scale biological opinion being developed in consultation with the U.S. Forest Service for the Land and Resource Management Plans (LRMPs) as amended by PACFISH, within the MCR steelhead ESU.

INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

Amount or Extent of Take

The NMFS anticipates that the subject action covered by this biological opinion has more than a negligible likelihood of resulting in incidental take of juvenile MCR steelhead. Some minimal level of incidental take is expected to result from direct mortality or injury to juvenile MCR steelhead during removal of the three large culverts at the Road 2490 crossing of Murderers Creek, removal and replacement of culverts in Oregon Mine and Tennessee Creeks, and placement of large logs, rootwads, and boulders within streams at specified sites along streambanks. Direct mortality is expected to be minimal, because juvenile MCR steelhead are able to avoid instream construction activities. The temporary increase in stream turbidity resulting from the action could result in temporarily reduced feeding efficiency for juvenile MCR steelhead. Effects from turbidity are also expected to be minimal because turbidity levels will quickly return to pre-construction levels once instream work is completed. Because of the inherent biological characteristics of aquatic species such as MCR steelhead , however, the likelihood of discovering take attributable to this action is very small. Effects of actions such as the Murderers Creek road reconstruction and resurfacing project addressed in this biological opinion are largely unquantifiable in the short-term, and may not be measurable as long-term effects on the species' habitat or population levels. Therefore, even though NMFS expects some incidental take to occur due to the action covered by this biological opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take of listed fish at any life stage.

Effect of the Take

In this Biological Opinion, NMFS has determined that the level of anticipated take is not likely to result in jeopardy to MCR steelhead or to destroy or adversely modify designated critical habitat

Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measures are necessary and appropriate to avoid or minimize take of MCR steelhead resulting from the subject action.

1. The MNF shall minimize the amount and extent of incidental take from in-water culvert removal/replacement and bank stabilization activities in Murderers Creek and tributaries.
2. The MNF shall minimize the amount and extent of incidental take and impacts to critical habitat from erosion and chemical pollution.
3. The MNF shall monitor the effectiveness of erosion control measures and riparian plantings.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the MNF must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1a. All work below the ordinary high water line will be completed within ODFW's in-water work period for Murderers Creek (July 15-August 31). Any extensions of the in-water work period will first be approved by and coordinated with ODFW and NMFS prior to implementation.

1b. When removing and replacing culverts, installing new culverts, placing bridge abutments, placing large wood, rootwads, and boulders and recontouring streambanks mechanized equipment will be positioned on the streambank (out of the water).

2a. Areas for fuel storage and refueling and servicing of construction equipment and vehicles will be located at least 150 feet away from any water body. Spill control materials will be on site during construction activities.

2b. Appropriate sediment control measures (e.g., silt fences, straw bales, mulch) shall be implemented to minimize sediment transport into the stream and downstream from the channel reconstruction and streambank recontouring sites.

2c. All equipment that is used for instream work will be cleaned of external grease, oil, and mud prior to entering the project area. Cleaning of equipment shall occur outside RHCAs.

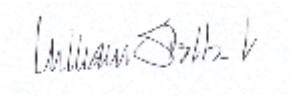
2d. In all disturbed areas along streambanks, the disturbed streambank shall be planted with native trees, shrubs, and grasses as appropriate.

3a. The MNF shall monitor the success of plantings and effectiveness of erosion control measures in the project area on at least three occasions during the first year (e.g. one month, six months, and one year) and yearly thereafter for a total of three years, or more often if necessary, after completion of the project.

3b. Failed plantings and erosion control measures shall be replaced, if replacement would potentially result in success, or alternative measures shall be implemented.

This concludes formal consultation. Please direct any questions regarding this consultation to Ron Lindland of my staff in the Oregon State Branch Office at 503-231-2315.

Sincerely



William Stelle, Jr.
Regional Administrator

cc: Doug Young, U.S. Fish and Wildlife Service
Tim Unterwegner, Oregon Department of Fish and Wildlife

REFERENCES

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this opinion in addition to the BA.

Busby, P.J., T.C. Wainwright, G.J. Bryant, L.J. Lierheimer, R.S. Waples, F.W. Waknitz, and I. V. Lagomarsino. 1996. Status Review of West Coast Steelhead from Washington, Idaho, Oregon, and California. NOAA Technical Memorandum NMFS-NWFSC-27. August. 261 p.

National Marine Fisheries Service (NMFS). 1997. Status Review Update for Deferred and Candidate ESUs of West Coast Steelhead. December 62 p.

National Marine Fisheries Service (NMFS). 1996. Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale. NMFS, Environmental and Technical Services Division, Habitat Conservation Branch, 525 NE Oregon Street, Portland, Oregon. 28 p.